UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/770,854	02/03/2004	Keith W. Forsyth	99845-00005	8451

27614 7590 10/31/2006

MCCARTER & ENGLISH, LLP
FOUR GATEWAY CENTER
100 MULBERRY STREET
NEWARK, NJ 07102

EXAMINER	
STAFIRA, MICHAEL PATRICK	

ART UNIT	PAPER NUMBER
2877	

DATE MAILED: 10/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/770,854	FORSYTH, KEITH W.	
	Examiner	Art Unit	
	Michael P. Stafira	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *remarks filed 7/26/2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-56* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-56* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-47 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims are directed to a judicial exception; as such, pursuant to the Interim Guidelines on Patent Eligible Subject Matter (MPEP 2106)), the claims must have either physical transformation and/or a useful, concrete and tangible result. The claims fail to include transformation from one physical state to another. Although, the claims appear useful and concrete, there does not appear to be a tangible result claimed. Merely calculating a midpoint and comparing the midpoint would not appear to be sufficient to constitute a tangible result, since the outcome of the calculating and comparing step has not been used in a disclosed practical application nor made available in such a manner that its usefulness in a disclosed practical application can be realized. As such, the subject matter of the claims is not patent eligible. See OG Notices; 22 November 2005, "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility".

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 16-19, 32-34, 47-56 are rejected under 35 U.S.C. 102(b) as being anticipated by Gregoris ('530).

Claim 1

Gregoris ('530) discloses acquiring a reflectance spectrum of light reflected off of a surface to be tested (See Abstract); calculating a midpoint wavelength of a transition in the reflectance spectrum (See Fig. 1); comparing the midpoint wavelength (30a, 30b) to a decision threshold wavelength (30c); and identifying ice on the surface if the midpoint wavelength is greater than the, decision threshold wavelength (Col. 5, lines 44-65).

Claim 2

Gregoris ('530) further discloses detecting reflected light off of the surface with a near-infrared camera (Col. 4, lines 65).

Claim 3

Gregoris ('530) further discloses the reflectance spectrum comprises detecting reflectance levels at three wavelength bands (Fig. 6, lines 30a-30c).

Claim 16

Gregoris ('530) further discloses indicating the presence of ice on the surface comprises generating an audio or visual indication of the presence of ice on the surface (Fig. 6, Ref. 20).

Claim 17

Gregoris ('530) discloses acquiring a reflectance spectrum of light reflected off of a surface to be tested (See Abstract); calculating a midpoint wavelength of a transition in the reflectance spectrum (See Fig. 1); comparing the midpoint wavelength to a decision threshold wavelength; and identifying liquid water on the surface if the midpoint wavelength is less than the decision threshold wavelength (Col. 5, lines 44-65).

Claim 18

Gregoris ('530) discloses acquiring the reflectance spectrum comprises detecting light reflected off of the surface with a near-infrared camera (Col. 4, lines 65).

Claim 19

Gregoris ('530) discloses the step of acquiring the reflectance spectrum comprises detecting reflectance levels in three wavelength bands (Fig. 6, lines 30a-30c).

Claim 32

Gregoris ('530) further discloses the presence of liquid water on the surface comprises generating an audio or visual indication of the presence of liquid water on the surface (Fig. 6, Ref. 20).

Claim 33

Gregoris ('530) discloses measuring three reflectance levels of light reflected off of a surface in three wavelength bands (Fig. 6, lines 30a-30c); calculating a midpoint wavelength of a transition using the three reflectance levels (Col. 4-5, lines 63-65); indicating the presence of ice on the surface if output of the decision function falls within a first pre-determined range; and indicating the presence of liquid water on the surface if output of the decision function falls

within a second pre-determined range (Col. 4-5, lines 63-65).

Claim 34

Gregoris ('530) discloses measuring the reflectance levels comprises detecting reflected light off of the surface with a near-infrared camera (Col. 4, lines 65).

Claim 47

Gregoris ('530) discloses indicating the absence of ice and liquid water on the surface when the output of the decision function falls between the first and second predetermined ranges (Fig. 6, Ref. 20).

Claim 48

Gregoris ('530) discloses a light source (Fig. 6, Ref. 12) for illuminating a surface to be tested; a detector for detecting at least three reflectance levels Ra, Rb, and Rc at three wavelengths a, b, and c (Fig. 6, lines 30a-30c); and a signal processor (Fig. 6, Ref. 18) having a decision function for determining the presence of ice or water on the surface based upon the at least three reflectance levels Ra, Rb, and Rc (Col. 5, lines 44-65).

Claim 49

Gregoris ('530) further discloses the light source comprises one of an incandescent light, a laser, an LED, or sunlight (Col. 4, lines 65-66).

Claim 50

Gregoris ('530) discloses the detector comprises one of a near-infrared detector, an infrared camera, an InGaAs focal-plane array, or a PbS vidicon (Col. 4, line 65).

Claim 51

Gregoris ('530) further discloses a spectrally-selective element for measuring the at least

three reflectance levels (Fig. 6, lines 30a-30c).

Claim 52

Gregoris ('530) further discloses the signal processor (Fig. 6, Ref. 18) indicates the presence of ice on the surface when the output of the decision function falls within a first predetermined range (Fig. 6, Ref. 20).

Claim 53

Gregoris ('530) discloses the signal processor indicates the presence of liquid water on the surface when the output of the decision function falls within a second predetermined range (Col. 5, lines 1-29).

Claim 54

Gregoris ('530) further discloses the signal processor indicates the absence of ice and water on the surface when the output of the decision function falls between the first and second predetermined ranges (Col. 5, lines 30-65).

Claim 55

Gregoris ('530) discloses the decision function is: 5 $F = (R b - R c) * (R a + R b) (R b + R c) * (R a - R b)$ where F represents an absolute value (Col. 3, lines 27-32).

Claim 56

Gregoris ('530) further discloses an ambient light detector connected to the signal processor for measuring ambient light levels (Col. 5, lines 30-35).

Response to Arguments

3. Applicant's arguments with respect to claims 1-47 have been considered but are moot in view of the new ground(s) of rejection.

With regards to claims 48-56 applicant takes the position on page 17 that the reference of Gregoris (5,500,530) fails to disclose at least three reflectance levels at three wavelengths.

Examiner that's the position that Gregoris discloses the three reflectance levels by splitting the incoming reflectance into three light signals with beamsplitters 26a-26c. The wavelengths are further separated by filters 28a-28c, which are then detected by three different detectors 30a-30c. Further in Col. 5, lines 54-65 the reference of Gregoris further discloses that the controller outputs signals representative of the reflectance in the lower, upper, and reference bands. The processor (18) further discloses a decision function by determining the presence of ice by taking the ratio of the upper and lower bands. It is the examiner's position that the signal processor of Gregoris at some time uses the upper, lower, and reference reflectance to determine if ice has formed on the surface and therefore reads on applicant's claimed limitations for claim 48. Therefore the rejection of claims 48-56 stands as rejected in the above paragraphs.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Stafira whose telephone number is 571-272-2430. The examiner can normally be reached on 4/10 Schedule Mon.-Thurs..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Toatley can be reached on 571-272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael P. Stafira
Primary Examiner
Art Unit 2877

October 23, 2006